

HANDHELDS

FAQ

Q I've heard that the Nokia N95 smartphone has 3D graphics acceleration. How does it achieve this, and what are the results like for games?

A Nokia smartphones have had 3D games since 2003, when Nokia released the N-Gage. The phones didn't have proper 3D hardware, so the 3D graphics tended to be blocky, with low frame rates and few fancy lighting or shading effects.

The N93 was the first phone to provide proper 3D hardware, and the N95 uses the same chipset. The phone's processor is a 330MHz Texas Instruments OMAP2420, which has 3D acceleration built in. Games use a version of the OpenGL API to communicate with the 3D hardware, which is similar to the PC OpenGL standard used in games such as Doom 3.

The 3D hardware makes a very obvious difference. The N95 comes with a demo of the System Rush racing game, and the lighting effects, frame rates and levels of detail are unlike those of any other mobile game.

Chris Finnamore

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NOKIA N95

★★★

£495 inc VAT SIM-free, £200 inc VAT on £35-per-month contract

Nokia's N95 is the most advanced smartphone we have ever seen. It has so many built-in features that you barely need to carry any other devices. It has all the usual smartphone functions such as email and web browsing, but Nokia has also thrown in a powerful music player, a five-megapixel camera and a GPS receiver.

The N95 has a larger screen than most Nokias but is fairly light and compact with the keypad closed. The screen is particularly suited to games, and the N95 has dedicated 3D graphics acceleration (see FAQ). You can slide the screen two ways. One way reveals the numeric keypad, while the other uncovers the music playback buttons. Sliding out the music buttons switches the phone to landscape mode and brings up the multimedia menu. This is a simplified version of the phone's standard menu, with short-cut buttons for non-phone functions such as the media player, web browser and Maps application.

Nokia's Maps program is one of the phone's most exciting features. Apple's forthcoming iPhone may have Google Maps installed, but Nokia's program is more powerful thanks to its built-in GPS. The standard version lets you browse maps of most of the developed world, and if you pay £47 for three years' subscription, you can upgrade to full turn-by-turn navigation with a 3D driving view. Map data is streamed to the handset from the internet, and the phone caches it, so it's always available. Nokia also provides a program called Maploader, which preloads maps on the phone for



free. You'll need a large memory card to take advantage of this, however.

The N95 can perform all the usual smartphone tasks, such as synchronising contacts and calendar information with your PC. You'll need to use a third-party program such as Mail for Exchange if you want to synchronise with a Microsoft Exchange server, though. The N95 can view Microsoft Word, Excel and PowerPoint documents and PDF files, but if you want to edit Office files, you'll need to buy a £10.50 upgrade for the N95's Quickoffice software. Setting up a wireless connection is simple with the wireless setup wizard, and the web browser can cope with almost any page you throw at it.

The N95's camera has an autofocus lens, but the phone makes do with a bright LED rather than a proper Xenon flash. Night shots are possible, but you must be close to your subject. In bright conditions, pictures are superb: photos are in focus, with vibrant colours and little noise. The music player application is also very powerful and is a match for Sony Ericsson's Walkman range. You can either copy audio files to the phone manually or synchronise tracks, albums and playlists with Windows Media Player 11.

Unfortunately, all the technology crammed into the N95 takes its toll on the battery. We didn't get more than 12 hours out of the phone with a moderate amount of camera, wireless networking and phone use. The N95 is a great handset, but it's expensive and the battery life makes it impossible to rely on as a phone.

Chris Finnamore

SUMMARY

- ✓ Very powerful
- ✓ Great camera
- ✗ Poor battery life

SMARTPHONE 2.6in 16 million-colour 320x240-resolution display, quad-band + 3G, Symbian Series 60 3rd Edition operating system, 160MB internal storage, micro-SD card slot, GPS receiver, 5-megapixel camera, LED flash, 4 hours' talk time, 9 days standby, 99x53x21mm, 120g
PART CODE N95
SUPPLIER www.carphone
warehouse.co.uk
DETAILS www.nokia.co.uk

Also consider...

TOMTOM One Regional

★★★★★

£150 inc VAT



TomTom's One Regional is a good-value GPS system with UK and Ireland maps.

It's easy to use, comes with a touch screen and has big icons that you can operate with your finger. Navigation is accurate and the voice prompts are clear. It's the best-value standalone GPS we've seen.



STANDALONE GPS 3.1in 320x240 resolution display, integrated SiRFstar III receiver, TomTom Navigator software, Navteq UK and Ireland maps, 1GB SD card, 174g PART CODE 5N00.110 SUPPLIER www.thenavigationcompany.com DETAILS www.tomtom.com
✓ Fast software; easy to use FULL REVIEW Mar 2007

SONY ERICSSON K800i

★★★★★

£196 inc VAT SIM-free; free on £25-per-month contract



The K800i is Sony Ericsson's first 3-megapixel camera phone. The phone's camera focuses more quickly than any camera phone we have seen and it's even possible to capture action shots with the BestPic mode. There's also a proper flash, so shots taken in darkness are properly illuminated. The photos have little noise and are fine for 6x4in prints. Apart from a wobbly keypad, the phone is easy to use. This is the best camera phone available and it's good value on contract.



MOBILE PHONE Tri-band GSM, 3G, 240x320-resolution LCD, 64MB internal memory, Memory Stick Micro slot, USB, Bluetooth, 3-megapixel camera, 47x22x105mm, 115g
PART CODE K800i SUPPLIER Vodafone/Orange/T-Mobile/O2
DETAILS www.sonyericsson.co.uk ✓ Superb camera
✗ Uses Memory Stick Micro cards FULL REVIEW Dec 2006

HTC Advantage X7500

★★★★

£685 inc VAT SIM-free, £265 inc VAT to
£460 inc VAT with a mobile phone contract

While Nokia's N95 (opposite) is a powerful but compact smartphone, HTC's Advantage X7500 PDA smartphone is more like a compact notebook. Most of the size is due to its enormous 5in LCD with 640x480 resolution, which is four times as large as the 320x240 screens on most Windows Mobile 5 PDA smartphones. Unfortunately, the operating system doesn't support this resolution natively. Text and icons are interpolated to make them larger, and Windows Mobile's ClearType feature smoothes the resulting jagged edges. If you want the Advantage to run properly in 640x480, you'll need to install the free MvRTrueVGA program from www.jaml.com/MvRTrueVGA.

The Advantage is very well designed. You can use it as a touch-screen PDA, entering text with the onscreen virtual keyboard or using handwriting recognition. The Advantage also comes with an attachable QWERTY keyboard. This is magnetic and incredibly easy to attach: if you bring it close to the Advantage's base it attaches itself in exactly the right place, and the operating system activates the keyboard automatically. It's slim, and the keys are well spaced so it's easy to avoid typing errors, but they have little travel, which makes it hard to tell when you've pressed one. The Delete key is also where you'd expect the Return key to be. Despite this, it's far quicker to use than the virtual keyboard.

The Advantage has a SIM card slot as well as wireless networking, so you can use a 3G or HSDPA data connection to



download data at up to 1.8Mbit/s if your network and contract supports it. You can also use it to make phone calls, although its size makes this impractical and you really need to use a headset. Even so, it will never be a phone replacement. Setting up wireless is fairly easy using the Comms Manager, but it's not a patch on the N95's simple wireless setup wizard. As with all Windows Mobile devices, setting up a GPRS or 3G data connection is needlessly fiddly. The built-in Pocket Internet Explorer is a reasonable web browser, but it makes a mess of some web pages. You should install the Opera web browser for Windows Mobile to make the most of the Advantage's web capabilities.

The Advantage has an integrated GPS receiver and comes with TomTom's Navigator 6 software. We love TomTom's Navigator for Windows Mobile, Palm and standalone GPS systems, but it runs fairly slowly on the Advantage.

If you want to browse the web, send emails and edit Word, Excel and PowerPoint documents, HTC's Advantage may fit the bill, and it's far more compact than a notebook. However, it's expensive, chunky and doesn't run the latest version of Windows Mobile.

Chris Finnamore

SUMMARY

- ✓ Compact
- ✓ Great screen
- ✗ Very expensive

PDA SMARTPHONE 624MHz Intel Bulverde processor, Quad-band + 3G + HSPDA, Windows Mobile 5 operating system, 640x480-resolution LCD, 7.6GB available storage, miniSD card slot, integrated GPS receiver, preinstalled TomTom Navigator 6 navigation software, Bluetooth, 802.11b/g, 3-megapixel camera, 134x98x20mm, 395g
PART CODE X7500
SUPPLIER www.expansys.com
DETAILS www.htc.com

CHOOSING A... Portable Media Player

Follow the steps to find your ideal specs

SCREEN: 320x240 resolution

HARD DISK: 20GB

SUPPORTED VIDEO: MPEG4, MPEG2, WMV

SUPPORTED AUDIO: MP3, WMA, WAV

BATTERY LIFE: Eight hours' music playback, three hours' video playback

Recommended minimum in grey

1 The most important thing to consider when buying a portable media player (PMP) is which file formats it supports. Not all PMPs can play the same file types. If your audio and video files are in a format the PMP can't play, you'll have to go through the hassle of encoding them again.

Ideally, a PMP should be able to play MPEG2, MPEG4 and WMV video files, and MP3, Wav and WMA audio files. Just because a video file appears to be in the right format doesn't mean it will definitely play on the PMP, as it may not support the video's audio format or resolution. Check the PMP's specifications for supported formats and resolutions. If you need to re-encode video files, you can use the free Super program from www.erightssoft.net/SUPER.html, or VirtualDub from www.virtualdub.org.

2 An easier way is to buy a player that can synchronise with Windows Media Player. Windows Media Player will take any file your PC can play and automatically convert it to a format that's compatible with your player. Bear in mind that some players support only WMV Simple Profile video, which is low resolution and poor quality.

3 PMPs have varying amounts of disk space. Most have built-in hard disks, but some rely on SD cards. Look for a PMP with at least 20GB of hard disk space. This will give you enough storage for around 30 high-quality films or 5,000 good-quality MP3 files. Many PMPs can also record video from a composite video source directly to the hard disk, and some let you schedule recordings in advance.

4 Battery life is another important factor to consider when buying a PMP. If you want to watch an entire film without charging the player, you'll need at least three hours of video playback. Bear in mind that some PMPs come with only a USB cable rather than a mains charger, so if you intend to travel with your PMP, it's worth buying a mains charger or mains-to-USB adaptor.

ARCHOS 404 Camcorder

★★★★

£200 inc VAT

Archos's 404 Camcorder is a portable media player (PMP) with a built-in digital video camera. It plays most popular video and audio file types. The interface can be confusing at first, but getting compatible content on to the player is easy using Windows Media Player 10 or 11. The 404 may have mediocre battery life and come without a mains charger, but it's good value.



PORTABLE MEDIA PLAYER 3½in, 320x240-pixel LCD, 30GB hard disk, plays MPEG4, H.264, MPEG2, WMV video (all up to DVD resolution), plays MP3, WMA, Protected WMA, Wav audio, 8 hours' music playback, 2½ hours' video playback, 100x78x15mm, 190g PART CODE Archos 404 CAM 30GB
SUPPLIER www.argos.co.uk DETAILS www.archos.com
✓ Comprehensive file support ✗ Mediocre battery life
FULL REVIEW May 2007

NAVICORE Personal 2007 Multiplatform package

★★★★★

£120 inc VAT



Navicore Personal 2007 is a GPS navigation package for the Symbian operating system. The software mirrors the interface of whichever smartphone you install it on, so is easy to use. The navigation display and voice prompts are also clear, and there's a built-in speed camera database. It's a fast and comprehensive GPS.



GPS KIT Symbian Series 60, Series 80, UIQ compatible, Bluetooth SIRFstar III receiver, Navicore 2007 software, TeleAtlas UK and Ireland maps SUPPLIER www.mobilefun.co.uk
DETAILS www.navicoretech.com ✓ Clear display; fast software
FULL REVIEW Mar 2007